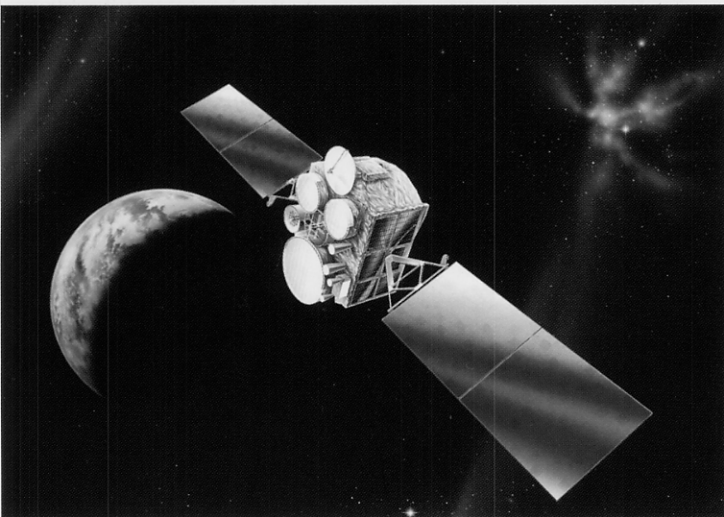


DSCS

Defense Satellite Communications System (DSCS)



Mission

As the backbone of the U.S. military's global satellite communications capabilities, the Defense Satellite Communications System (DSCS) constellation provides nuclear-hardened, anti-jam, high data rate (HDR), long haul, communications to users worldwide.

DSCS supports the defense communications system; Army ground mobile forces; Air Force airborne terminals; Navy ships at sea; the White House Communications Agency; the State Department; and special users. Overall DSCS responsibility resides in the U.S. Space Command (USSPACECOM).

Description

DSCS III satellites support globally distributed DoD and national security users. The final 4 of 14 satellites received Service Life Enhancement Program (SLEP) modifications. These changes provide substantial capacity improvements through higher power amplifiers, more sensitive receivers, and additional antenna connectivity options. The DSCS communications payload includes six independent Super High Frequency (SHF) transponder channels that cover a 500MHz bandwidth. Three receive and five transmit antennas provide selectable options for Earth coverage, area coverage, and/or spot beam coverage. A special purpose single-channel transponder is also on board.

The DSCS III system provides the capabilities needed for effective implementation of worldwide military communications. It can adapt rapidly to dynamic operating conditions and perform under stressed environments. DSCS III operates with large or small terminals, and with Code Divisional Multiple Access, Frequency Division Multiple Access, or Time Division Multiple Access. DSCS's independent channels group users by operational needs or geographical location by allocating receiver sensitivity and transmitter power, thus providing maximum efficiency.

Background

The first DSCS III satellite was launched in October 1982. The primary on-orbit DSCS constellation is comprised of five DSCS III satellites in geosynchronous, geostationary orbit. DSCS satellite B11 (DSCS III SLEP), launched in October 2000, is currently operating over the Eastern Atlantic region.

The MILSATCOM Joint Program Office (MJPO) Space and Missile Systems Center, Los Angeles AFB, California, develops, acquires, and sustains the DSCS Space Segment. Lockheed Martin Space Systems Company in Sunnyvale, CA, is responsible for DSCS satellite design, manufacture, and test under contract to the Air Force. Fourteen DSCS III satellites have been built. Twelve satellites are on orbit and two are scheduled to launch before the end of 2003.

General Characteristics

Primary function:	High-capacity military communications satellite
Primary contractor:	Lockheed Martin Space Systems Company—Sunnyvale Operations
Dry Weight:	Approximately 2,000 lbs
Orbit altitude:	22,300 miles
Payload:	Ten 50-watt X-band Traveling Wave Tube Amplifiers
Antennas:	Wideband multibeam and two Earth Coverage receive antennas; two transmit multibeam, gimbaled dish, and two Earth coverage antennas
Capability:	Up to 200 Mbps
Unit Cost:	Approximately \$200 million
Survivability:	Nuclear tested
Launch vehicle:	Boeing Delta IV Medium EELV
Constellation:	Five primary, five residual satellites



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